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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,991	10/26/2000	Harold R. Smart	26334.8	3293

26231 7590 07/06/2004

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EXAMINER	
VON BUHR, MARIA N	
ART UNIT	**PAPER NUMBER**
2125	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/696,991	SMART ET AL.	
	Examiner	Art Unit	
	Maria N. Von Buhr	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 Oct 2000, 16 Feb 2001 & 08 Apr 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 October 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02162001&04082004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This application is a continuation-in-part of Application Serial No. 09/118,406 and is, therefore, accorded the benefit of the earlier filing date of July 17, 1998, for that subject matter which was originally presented in the parent application. Any previously presented rejections or objections which are not expressly repeated in this Office action are hereby withdrawn.

2. Claims 1-4 are pending in this application.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The disclosure is objected to because the status of the referenced application, at pages 1 and 4 of the specification, needs to be updated. Appropriate correction is required in response to this Office action.

5. The following is a quotation of the second paragraph of 35 U.S.C. §112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which Applicant regards as his invention.

6. Claims 1-4 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In claim 1, there is no clear and proper antecedent basis for "the relay." Also, there is no clearly claimed support for the limitation "wherein the relay integrated with the balance plug, the supply plug, and the vent plug avoids a flow deadband in which a signal pressure generated by the amplifier changes without corresponding output flow, thereby providing both a reliable steady state relay performance and a consistent dynamic response," since there is no clear nexus between the body of the claim, pertaining simply to the connections between various plugs, and any necessarily resultant avoidance of flow deadband nor providing of reliable steady state relay performance and a consistent dynamic response. These "wherein" and "thereby" clauses are, therefore, deemed to be mere

statements of desired result, with no support within the instant claim language. In addition, "A" (line 1) should be corrected to -- An --.

In claim 3, there is no clearly claimed support for the limitation "wherein the regulator maintains a near constant fluid feeding the nozzle," since there is no clear nexus between the body of the claim, pertaining simply to the presence of a flat strip, flow regulator and flat spring (none of which are actually even claimed as being connected in any way), and any necessarily resultant maintaining of a near constant fluid feeding the nozzle. This "wherein" clause is, therefore, deemed to be a mere statement of desired result, with no support within the instant claim language.

In claim 4, there is no clearly claimed support for the limitation "thereby providing a predetermined temperature and vibration resistance for the converter," since there is no clear nexus between the body of the claim, pertaining simply to the connections between a flexure, two bias springs and a molded spring support, and any necessarily resultant predetermined temperature and vibration resistance for the converter. This "thereby" clause is, therefore, deemed to be a mere statement of desired result, with no support within the instant claim language.

The remainder of the claims are rejected as necessarily incorporating the above-noted ambiguities of their parent claims.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by Applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by Applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 3 is rejected under 35 U.S.C. §102(e) as being clearly anticipated by Briant et al. (U.S. Patent No. 6,367,766), which discloses "a proportional flow valve wherein a solenoid assembly moves

an armature assembly towards a valve seat in proportion to the flow of current through the solenoid assembly. The armature assembly abuttingly engages a seal to hold the seal away from the valve seat at a distance correspondingly proportionally related to the applied current. In this manner, the seal is movable towards and away from the valve seat among a fully open position, a closed position, and partially open positions therebetween. A spring assembly biases the seal towards the valve seat and, when the solenoid assembly is energized, the armature assembly allows the spring assembly to seat the seal against the valve seat to place it in the closed position" (the abstract), wherein "the armature assembly preferably includes a plunger portion and a pin portion. The plunger portion interacts with the solenoid assembly. The pin portion abuttingly engages the seal and extends through the passageway and into the inlet chamber when the seal is in the open positions. The armature assembly additionally or alternatively preferably includes a biasing member which is arranged to resist movement of the armature assembly away from the valve seat. This biasing member may be an annular flat spring positioned adjacent and/or around the armature assembly" (see, at least, Figures 1 and 2, with accompanying text; col. 2, lines 21-30).

9. Claim 3 is rejected under 35 U.S.C. §102(b) as being clearly anticipated by Auwaerter et al. (U.S. Patent No. 5,697,554), which discloses "a metering valve for metering a fluid for a fuel injection valve for internal combustion engines, with a hydraulic displacement amplifier for converting the actuating displacement of a piezoelectric actuator into an increased stroke of the valve needle. Integrating the displacement amplifier spatially into the valve housing in an "O valve" to give a small overall volume is served by providing the lifting piston of the displacement amplifier with an end section of reduced diameter which projects into a recess in the operation piston of the displacement amplifier. A Belleville spring lying in the amplifier chamber bounded by the pistons presses the operating piston against the actuator, and a helical compression spring arranged in the recess concentrically to the end section presses the lifting piston against the valve needle" (the abstract), wherein "a first compression spring (31), which presses the operating piston (30) against the actuator (25) and is designed as a flat spring is supported on the operating piston (30) and on the valve housing (10)" (claim 1).

10. Claims 1, 2 and 4 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. §112, second paragraph, set forth in this Office action.

As per claims 1-2, none of the prior art of record, neither alone nor in combination, is deemed to teach nor fairly suggest the instantly claimed "bead chain connecting the balance plug and the supply plug," in combination with the other instantly claimed elements of the amplifier.

As per claim 4, none of the prior art of record, neither alone nor in combination, is deemed to teach nor fairly suggest the instantly claimed "thickness of the flexure is locally reduced in an area not integrated into the molded spring support," in combination with the other instantly claimed elements of the converter.

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. Applicant is advised to carefully review the cited art, as evidence of the state of the art, in preparation for responding to this Office action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria N. Von Buhr whose telephone number is 703-305-3837. The examiner can normally be reached on M-F (9am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703-308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maria N. Von Buhr
Primary Patent Examiner
Art Unit 2125

MNVB
6/25/04